AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for generating frame designs for manufacturing a vehicle, the method comprising:

(a) obtaining a specification ~~of one or more~~ for a plurality of components to be mounted on a frame of a vehicle,

(b) obtaining processing data corresponding to each of the ~~one or more~~ plurality of components to be mounted on the frame of the vehicle, wherein the processing data for each of the plurality of components includes location information corresponding to a logical starting position for attempting to locate a component on the frame and a range of additional positions to locate the component and three-dimensional data corresponding to a tessellated representation of the component;

(c) selecting a component of the ~~one or more~~ plurality of components and setting a current position as the logical starting position in the processing data;

(d) determining whether the tessellated representation of the selected component located at the current position interferes with the tessellated representation of any other components already configured to the frame;

(e) if an interference occurs, setting a next position in the range of additional positions defined in the processing data as the current position for the selected component and repeating (d);

(f) if no interference occurs, configuring ~~the position of~~ the selected component [[as]] to the frame at the current position;

(g) repeating (d) – (f) for any remaining components of the ~~one or more~~ plurality of components; and

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(h) generating a frame design corresponding to the configured positions for each of the ~~one or more~~ plurality of components.

2. (Original) The method as recited in Claim 1, wherein determining whether the tessellated representation of the selected component located at the current position interferes with the tessellated representation of any other components already configured to the frame includes iteratively comparing whether any tessellated planes within the three-dimensional data of the selected component intersect with any tessellated planes with the three-dimensional data of any components already configured to the frame.

3. (Original) The method as recited in Claim 1, wherein determining whether the tessellated representation of the selected component located at the current position interferes with the tessellated representation of any other components already configured to the frame includes determining whether the selected component located at the current position is located within another configured component.

4. (Currently amended) The method as recited in Claim 1, wherein obtaining a specification ~~of one or more~~ for the plurality of components to be mounted on a frame of a vehicle includes obtaining a list of required components from a user interface.

5. (Original) The method as recited in Claim 1, wherein the logical starting position corresponds to a dimensional measurement relative to the frame.

6. (Original) The method as recited in Claim 1, wherein the logical starting position corresponds to a dimensional measurement relative to another component.

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7. (Original) The method as recited in Claim 1, wherein the range of additional positions to locate the component includes a maximum dimensional measurement in a first direction from the logical starting position.

8. (Original) The method as recited in Claim 7, wherein the range of additional positions to locate the component includes a maximum dimensional measurement in a second direction from the logical starting position.

9. (Currently amended) The method as recited in Claim 1, wherein prior to configuring ~~the position of~~ the selected component to the frame, the method further comprising:

determining whether the selected component fits with any existing holes on the frame for attaching a component at the current location;

if the selected component does fit with any existing holes on the frame for attaching a component, determining whether the tessellated representation of the selected component located at a position corresponding to a matching hole interferes with the tessellated representation of any other components already configured to the frame;

if no interference occurs, configuring ~~the position of~~ the selected component [[as]] to the frame at the position corresponding to a matching hole.

10. (Currently amended) The method as recited in Claim 1, wherein each of the ~~one or more~~ plurality of components corresponds to one or more pieces of geometry.

11. (Currently amended) The method as recited in Claim 1, wherein obtaining processing data corresponding to ~~one or more~~ the plurality of components includes traversing a tree structure to select a set of processing data.

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12. (Original) The method as recited in Claim 11, wherein the tree structure includes two or more sets of processing data for a selected component and wherein setting a next position in the range of additional positions defined in the processing data includes selecting a new set of processing data and obtaining a next position.

13. (Original) The method as recited in Claim 1, wherein generating a frame design corresponding to the configured positions for each of the ~~one or more~~ plurality of components includes generating a three-dimensional representation of the frame design.

14. (Original) The method as recited in Claim 1, wherein generating a frame design corresponding to the configured positions for each of the one or more components includes generating a textual file of the frame design.

15. (Original) A computer-readable medium having computer-executable instructions for performing the method recited in Claim 1.

16. (Original) A computer system having a processor, a memory and an operating environment, the computer system for performing the method recited in Claim 1.

17. (Currently amended) A method for generating frame designs for manufacturing a vehicle, the method comprising:

(a) obtaining a specification ~~of one or more~~ for a plurality of components to be mounted on a frame of a vehicle,

(b) obtaining processing data corresponding to each of the ~~one or more~~ plurality of components to be mounted on the frame of the vehicle, wherein the processing data for each of the plurality of components includes location information corresponding to a logical starting position for attempting to locate a component on the frame and a range of additional

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dimensional positions to locate the component and three-dimensional data corresponding to a tessellated representation of the component;

(c) selecting a component of the ~~one or more~~ plurality of components and setting a current position as the starting position in the processing data;

(d) configuring a position for the selected component based upon determining whether a tessellated representation of the selected component interferes with the tessellated representation of any other components already configured to the frame;

[[(g)]] (e) repeating (d) for any remaining components of the ~~one or more~~ plurality of components; and

[[(h)]] (f) generating a frame design corresponding to the configured positions for each of the ~~one or more~~ plurality of components.

18. (Original) The method as recited in Claim 17, wherein determining whether a tessellated representation of the selected component interferes with the tessellated representation of any other components already configured to the frame includes iteratively comparing whether any tessellated planes within the three-dimensional data of the selected component intersect with any tessellated planes with the three-dimensional data of any components already configured to the frame.

19. (Original) The method as recited in Claim 17, wherein determining whether the tessellated representation of the selected component located at the current position interferes with the tessellated representation of any other components already configured to the frame includes determining whether the selected component located at the current position is located within another configured component.

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20. (Currently amended) The method as recited in Claim 17, wherein obtaining a specification of ~~one or more~~ the plurality of components to be mounted on a frame of a vehicle includes obtaining a list of required components from a user interface.

21. (Original) The method as recited in Claim 17, wherein the logical starting position corresponds to a dimensional measurement relative to the frame.

22. (Original) The method as recited in Claim 17, wherein the logical starting position corresponds to a dimensional measurement relative to another component.

23. (Original) The method as recited in Claim 17, wherein the range of additional positions to locate the component includes a maximum dimensional measurement in a first direction from the logical starting position.

24. (Original) The method as recited in Claim 23, wherein the range of additional positions to locate the component includes a maximum dimensional measurement in a second direction from the logical starting position.

25. (Original) The method as recited in Claim 17, further comprising configuring a new position for the selected component based upon determining whether the selected component fits with any existing holes on the frame for attaching a component.

26. (Original) The method as recited in Claim 25, wherein configuring a new position for the selected component based upon determining whether the selected component fits with any existing holes on the frame for attaching a component includes:

determining whether the selected component fits with any existing holes on the frame for attaching a component at the previously configured position;

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if the selected component fits with any existing holes on the frame for attaching a component, determining whether the tessellated representation of the selected component located at a position corresponding to a matching hole interferes with the tessellated representation of any other components already configured to the frame;

if no interference occurs, configuring the position of the component as the position corresponding to a matching hole.

27. (Currently amended) The method as recited in Claim 17, wherein generating a frame design corresponding to the configured positions for each of the ~~one or more~~ plurality of components includes generating a three-dimensional representation of the frame design.

28. (Currently amended) The method as recited in Claim 17, wherein generating a frame design corresponding to the configured positions for each of the ~~one or more~~ plurality of components includes generating a textual file of the frame design.

29. (Currently amended) The method as recited in Claim 17, wherein obtaining processing data corresponding to ~~one or more~~ the plurality of components includes traversing a tree structure to select a set of processing data.

30. (Original) The method as recited in Claim 29, wherein the tree structure includes two or more sets of processing data for a selected component and wherein setting a next position in the range of additional positions defined in the processing data includes selecting a new set of processing data and obtaining a next position.

31. (Original) A computer-readable medium having computer-executable instructions for performing the method recited in Claim 17.

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32. (Original) A computer system having a processor, a memory and an operating environment, the computer system for performing the method recited in Claim 17.

33. (Currently amended) A computer-readable medium having computer-executable modules for generating frame designs for manufacturing a vehicle, the computer-executable modules comprising:

an interface module for obtaining a specification of ~~one or more~~ a plurality of components to be mounted on a frame of a vehicle and for transmitting a frame design corresponding to a configuration of the components mounted on the frame of the vehicle;

a processing data module for storing processing data corresponding to each of the ~~one or more~~ plurality of components to be mounted on the frame of the vehicle, wherein the processing data includes location information corresponding to a logical starting position for attempting to locate a component on the frame and a range of additional positions to locate the component and three-dimensional data corresponding to a tessellated representation of the component; and

a configuration module for configuring a location for a selected component of the ~~one or more~~ plurality of components to be mounted on a frame of a vehicle based upon an interference check corresponding to comparison of a tessellated representation of the selected component interferes with the tessellated representation of any other components already configured to the frame.

34. (Original) The computer-readable medium as recited in Claim 33, wherein the interference check includes iteratively comparing whether any tessellated planes within the three-dimensional data of the selected component intersect with any tessellated planes with the three-dimensional data of any components already configured to the frame.

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35. (Original) The computer-readable medium as recited in Claim 33, wherein the logical starting position corresponds to a dimensional measurement relative to the frame.

36. (Original) The computer-readable medium as recited in Claim 33, wherein the logical starting position corresponds to a dimensional measurement relative to another component.

37. (Original) The computer-readable medium as recited in Claim 33, wherein the range of additional positions to locate the component includes a maximum dimensional measurement in a first direction from the logical starting position.

38. (Original) The computer-readable medium as recited in Claim 37, wherein the range of additional positions to locate the component includes a maximum dimensional measurement in a second direction from the logical starting position.

39. (Original) The computer-readable medium as recited in Claim 33, wherein the configuration module is further operable for configuring a new position for the selected component based upon determining whether the selected component fits with any existing holes on the frame for attaching a component.

40. (Original) The computer-readable medium as recited in Claim 39, wherein configuring a new position for the selected component based upon determining whether the selected component fits with any existing holes on the frame for attaching a component includes:

determining whether the selected component fits with any existing holes on the frame for attaching a component at the previously configured position;

if the selected component fits with any existing holes on the frame for attaching a component, determining whether the tessellated representation of the selected component located

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at a position corresponding to a matching hole interferes with the tessellated representation of any other components already configured to the frame;

if no interference occurs, configuring the position of the component as the position corresponding to a matching hole.

41. (Original) The computer-readable medium as recited in Claim 33, wherein the processing module selects the processing data by traversing a tree structure.

42. (Original) The computer-readable medium as recited in Claim 41, wherein the tree structure includes two or more set of processing data for a selected component and wherein the configuration module selects a next position in the range of additional positions defined in the processing data by selecting a new set of processing data from the processing module and obtaining a next position for the component from the new set of processing data.

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